REGISTER FILE BIT AND METHOD FOR FAST CONTEXT SWITCH

ABSTRACT OF THE DISCLOSURE

A register file bit includes a primary latch and a secondary latch with a feedback path and a context switch mechanism that allows a fast context switch when execution changes from one thread to the next. A bit value for a second thread of execution is stored in the primary latch, then transferred to the secondary latch. The bit value for a first thread of execution is then written to the primary latch. When a context switch is needed (when the first thread stalls and the second thread needs to begin execution), the register file bit can perform a context switch from the first thread to the second thread in a single clock cycle. The register file bit contains a backup latch inside the register file itself so that minimal extra wire paths are needed to or from the existing register file.